STATE OF MONTANA
JOB PROFILE AND EVALUATION

The job profile is a streamlined position description and may serve as the core document for all human resource functions such as recruitment, selection, performance management and career and succession planning. It was developed, initially, for use in classifying positions in Pay Plan 020.

If you are converting a position to Pay Plan 020 and the position has not changed simply cut and paste the information needed from the current position description. The position description contains sections that are no longer used to classify the position, such as: Working Conditions and Physical Demands; Management and Supervision of Others; Supervision Received; Scope and Effect; and Personal Contacts. These may still be important to the position and may be included in **Section IV** – **Other Important Job Information.**

When working with a new position, classification request or change to a position in Pay Plan 020, complete the information below to provide the required documentation for classification.

SECTION I – Identification

Working Title	Job Code Number	Job Code Title
Designer	173136	Designer

Pay Band	Position Number	Check ONE box :
6	32001, 32017, 32022, 32035, 32036, 32048, 32049, 32054, 32088, 32089, 32090, 32091, 32092 and district positions including: 53061, 53041, 53042, 54064, 55044, 60075, 51069, 51001, 51004, 57204, 59021, 59078, and 59225	☐ FLSA Exempt ☒ FLSA Non-Exempt

Department	Division and Bureau
Department of Transportation	Highways Division Preconstruction Bureau
Section and Unit	**Work Address and Phone**
Road Design Section	Department of Transportation State of Montana 2701 Prospect Ave. Helena, MT 59601-1001 444-7824

Profile Produced By	Work Phone
John Jones	444-6229

Work Unit Mission Statement or Functional Description - This section should include a complete statement of the mission or function as it relates to the work unit.

The Road Design Section is responsible for the assembly of the road plans package, which is the major part of the development of all highway projects in the Department of Transportation.

Describe the Job's Overall Purpose:

The position participates in the assembling of the road plans package which entails the proposal and evaluation of alternates, computation of geometric data, estimating of the plan quantities, assembly of the plan sheets, and writing of specifications needed to build highways on the Secondary, Primary, and Interstate Highway systems of the State of Montana.

SECTION II - Major Duties or Responsibilities	**% of Time**
This section should be a clear concise statement of the position's duties. Well written thorough task/duty statements are required here to accurately evaluate the position. 1. What are the major duties or responsibilities assigned to this position? What are the specific tasks involved in accomplishing those duties. Group duties in order of importance and estimate the percent of time needed to perform each duty (estimates are not required for individual tasks). **NOTE:** Because you are identifying **major** duties usually 3-5, the quantity of time probably will not be less than **20%.** If a duty is essential but not performed routinely you should list it. For example, lobbying during the legislative session may not take up a large percent of total work time, but can be an essential duty.	
A. Compile and integrate design information for a wide range of unprecedented innovative design projects using knowledge of drafting, engineering practices, mathematics, highway construction processes and standards. Must be able to display a high level of innovation in the use of computer-assisted design software. 1. Review design proposals, field notes, correspondence and reports for overall design objectives in order to compile the basic design plan, which involve geometrics and alignments for which little precedent or prior determination exists. 2. Research "as-built" design plans by reviewing hard-copy plans, analyzing design modifications that are needed to bring plans within current standards, and making modifications to design plans accordingly. 3. Integrates highly-sensitive environmental and historic considerations, as well as extensive terrain, climate, land use, utility, right-of-way, and other field data, sufficient to develop preliminary design. 4. Establish the preliminary design for projects having undetermined alignments and geometrics and an extensive amount of variables, such as designs involving unusual terrain or irrigation considerations, sensitive environmental or historical factors, or highly-populated urban traffic sequencing and operations. 5. Make initial design determinations based on construction costs versus constructability, safety, or major environmental impact issues. The incumbent, with no supervision, evaluates the need for applying unique design or construction methods for projects in which no precedent has been determined, and in a considerable number of cases may propose divergent alternative designs to the supervising engineer. 6. Compile initial design parameters by manual coding of alphanumeric data for	15%

computerized design software, interactive input of the data, or assigning the data to be input by subordinates after design parameters have been compiled. 7. Develop and author the scope-of-work report, with no supervision, and deliver it to the supervising engineer for review and approval. The incumbent designer must have the ability to interpret and apply a broad range of site specific data, collate that information with other technical recommendations and occasionally adapt or extend unprecedented design concepts in order to finalize designs.	
B. Design preliminary plans for a wide range of unprecedented innovative design projects using knowledge of drafting, engineering practices, mathematics, construction processes, and computer-assisted design software. 1. Develop typical section drawings considering unusual site conditions, topography, soils information, material availability, and cost analysis to the typical section surface options recommended by the material section and select optimum combinations. 2. Determine and calculate roadway stationing, compute horizontal alignments and vertical curvatures Inherently, the incumbent in this position will determine these parameters for highly congested, populated areas, or other unique circumstances which complicates the design to a degree calling for innovative methods to facilitate geometric design and determine the most cost-effective grades and/or gradelines.. 3. With no supervision, code computer forms or generate CADD drawings which are in turn used to compute volume of excavations and fills. 4. Develop mass diagrams (design of earth moving operations) by balancing excavation computations with hauling distances, waste dispersal potential and availability, soil type and nature, and material shrinkage and swell in order to achieve a cost effective project. 5. Determine the most cost-effective design details for projects involving unusual terrain, irrigation, or environmental issues, by applying site, project, community, safety and political criteria to recommendations from the field and other departmental sections. 6. Within most projects assigned, develop innovative design techniques, applications or methods of construction to resolve design problems by applying construction, design, safety, cost and other factors to site circumstances and select the optimum design. 7. Design final road plans using computer assisted design and drafting equipment. 8. Submit preliminary plans to all affected work units for preliminary review of alignment and grade; gather comments indicating field or other work unit problems, and change or have plans changed accordingly.	55%
C. Perform miscellaneous duties involved with finalizing design for a wide range of unprecedented innovative design projects using knowledge of drafting, engineering practices, mathematics, construction processes, and computer-assisted design software.	25%

1. Attend final plan-in-hand in order to compile information that may involve design changes or additions. Under no supervision, the incumbent will normally correlate such information with other related work units by authoring a plan-in-hand report documenting all decisions made by the plan-in-hand team. The report is normally edited by the Design Supervisor or supervising engineer. 2. Prepare and adjust graphs and hauling diagrams used in earthmoving operations to make the best economic use of land mass quantities.. 3. Make decisions involving the incorporation, into the final plans, of design changes earmarked at the plan-in-hand, and implement those changes within limits imposed by economic, environmental, and safety factors. 4. Compile or direct subordinates to compile cost estimates for contract items generated either by computer design software or by manual calculation. 5. Identify and create special provisions necessary to ensure the successful bidding and construction of a project by documenting necessary information, data, or instructions. 6. Code the appropriate criteria and determine the best computer generated alternative erosion control features for submittal to The Water Quality Division of the Department of Health for approval.	
D. Supervise the development of road plans by assigning to subordinates on a project-by-project basis, tasks such as drafting or calculation, establishing their work pace, guiding their approach to the work, reviewing and resolving problems, and coordinating with the Design Supervisor on status and performance issues.	5%

1. Give specific examples of the types of problems solved, decisions made or procedures followed when performing the most frequent duties.

Solves problems involved with alignment and grade, earthwork, geometrics, environmental and safety issues of highway projects. Makes decisions displayed in technical reports based on standards established by AASHTO and departmental pre-requisites; and experience gained through years of experience.

The predominant work of this position involves making determinations as to the most economical, safest, or technically best design details of a road design plan. Work is reviewed in the normal DOT planning process; but this position is expected to use a substantial amount of inherent judgment as to choices within the project scope. A Road Design Checker will review the calculations and internal consistency with the specifications; however, total autonomy is exercised with respect to design methodology. Review of this methodology typically does not take place until the plan-in-hand meetings where a team consensus is reached.

2. What do you consider the most complicated part of the job?

Determining the most cost-effective design details for projects involving unusual terrain, irrigation, or environmental issues, by applying site, project, community, safety and political criteria to recommendations from the field and other departmental sections. Also developing mass diagrams (design of earth moving operations) by balancing excavation computations with hauling distances, waste dispersal potential and availability, soil type and nature, and material shrinkage and swell in order to achieve a cost effective project.

The incumbent in this position makes design recommendations on the economy, adequacy, safety, and regulatory compliance of roadway projects according to established criteria. This work involves the evaluation of design recommendations made by specialty work units, the application of those recommendations to overall site characteristics, and choices regarding optimum design details. The designer's choices are typically presented in the form of recommendations. Decision-making responsibility for non-standard or non-routine designs will ultimately be shared with the Design Supervisor, supervising engineer and/or others later on in the design process.

3. What laws, regulations, guidelines, manuals or other written established procedures are available to the incumbent?

Road Design Manual, Standard Specifications for Road and Bridge Construction 1995 Edition, Detailed Drawings, Manual on Uniform Traffic Control Devices and AASHTO Policy on Geometric Design of Highways and Streets.

4. Which of the duties and/or specific tasks listed under 1. (above) are considered “essential functions” which must be performed by this position (with or without accommodations)? (If you need information or training on the identification of essential functions, please contact MDT Human Resources Division.)

Solving of all problems dealing with the actual design of highways (e.g. geometrics, alignment and grade, earthwork. Environmental guidelines set by others are followed by the incumbent, and technical reports are authored by the incumbent but may be edited or finalized by the Supervising Engineer.

6. If this position supervises other positions, complete the following information.

The number of FTE employees directly supervised is: Generally 1. Supervision is on a project-by-project basis, depending on the project status and work-load factors. The incumbent may supervise the work of a Design Technician, Grade 11 for limited periods.

List the complexity levels/pay bands of each those subordinates. Band 4

Please list the Position Numbers for those directly supervised. 32033

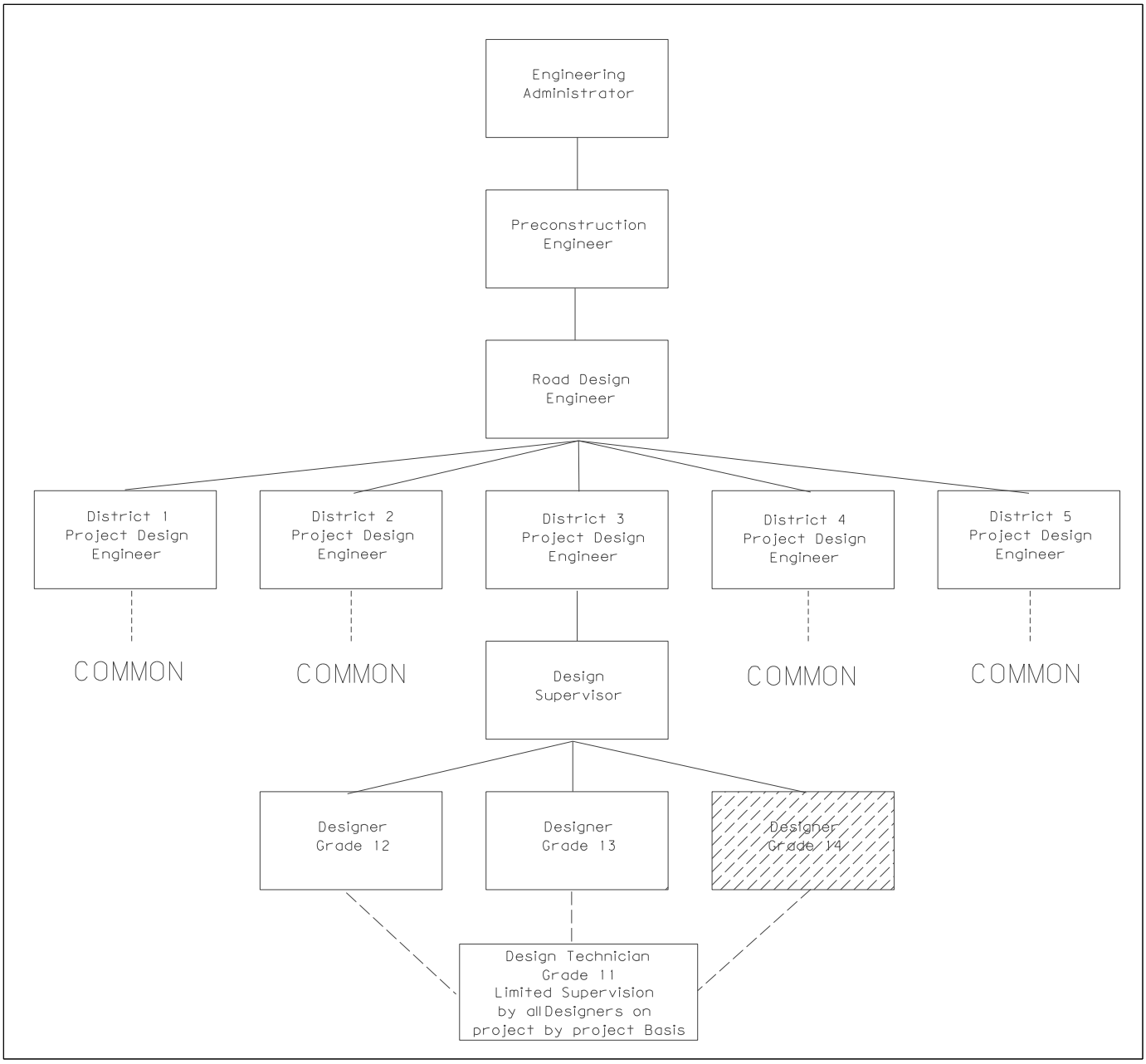
Is this position responsible for (please check ONLY those boxes which apply to the position and for which the position has “signatory” authority.)

☐ Hiring ☐ Layoffs/termination of temporary or seasonal workers

☐ Performance Management (conducting and signing performance appraisals as the direct supervisor or the reviewing manager) ☐ Promotions

☐ Direct /Line Supervision ☒ Leadworker ☐ Discipline ☐ Other:

Please attach an up-to-date Organizational Chart (or copy from a Power Point document into space below).



SECTION III - Minimum Qualifications - List the minimum requirements for **first day** of work. (These will be the minimum qualifications utilized for **recruitment and performance management purposes**; this information is not used for classification purposes.)

Please list the main knowledge and skill areas required for the job:

Thorough knowledge of advanced and specialized design and construction methods, processes and procedures, computer-assisted drafting and design software, and engineering techniques are required for a wide range of unprecedented innovative design projects. A thorough working knowledge of departmental and federal guidelines and procedures regarding road design and construction is also required.

What behaviors are required to perform the duties? **NOTE:** Identifying behaviors used for recruitment and selection and other HR functions are part of building a competency model (see **Creating Competency Models** in Guide). A position description will provide helpful information if a model has not been developed. Often "abilities" from the current PD can be stated as desired and observable behaviors. For example, "the ability to communicate clearly in writing" can be restated "writes clearly and concisely".

The incumbent designer must have the ability to interpret and apply a broad range of site specific data, collate that information with other technical recommendations and occasionally adapt or extend unprecedented design concepts in order to finalize designs.

The incumbent must show the ability to analyze technical and scientific information and use judgment to determine the value of the information inherent to the design of highways. Demonstrate the ability to communicate effectively both orally and in writing and establish effective working relationships with personnel from other agencies and the general public.

CORE VALUES – GENERIC BEHAVIORS 4/3/06

CUSTOMER ORIENTATION/SERVICE (P.11-12)

Creates an atmosphere in which timely and high quality information flows smoothly between self and customer. Encourages open, honest, and constructive expression of ideas and opinions. Demonstrates active listening skills. Uses appropriate body language. Seeks to understand others' viewpoint. Analyzes the customer needs and adjusts to the perspective of the customer, when appropriate.

DECISION MAKING (P. 22)

Independently takes action and responsibility for solving problems. Makes decisions designed to achieve desired outcomes. Challenges the status quo by taking calculated actions in complex, ambiguous, contentious, or hazardous situations to force an issue or set a direction.

PERSONAL ACCOUNTABILITY AND OWNERSHIP (P. 31)

Takes pride in the job. Actively engages in professional self-development opportunities. Accepts individual responsibility for all actions taken.

LEADERSHIP (P. 35)

Shares information, feedback, and knowledge (two-way communication) with key persons inside and outside of the organization to ensure successful project outcomes and/or improvement. Includes training, teaching, and coaching others. Actively steps into a leadership role.

ETHICS (P. 44)

Models high standards of honesty, integrity, trust, and openness. Knows, understands, and follows through with the correct standards of conduct and moral judgment required; is willing to act outside the norm when needed to adhere to ethical principles. Communicates and demonstrates actions in a consistent manner. Respects others, regardless of individual capabilities, agendas, opinions or needs.

FLEXIBILITY AND ADAPTABILITY (P. 49)

Accepts change as a healthy and normal part of growth. Receptive to new information and recognizes the validity of various viewpoints; sees situations objectively. Responds positively to changes in direction and priorities, responsibilities or assignments. Adjusts to multiple demands, priorities, ambiguity, and change positively. Works effectively within a variety of situations, individuals, or groups.

TEAMWORK (P. 50)

Works cooperatively with others as part of a team as opposed to separately or competitively.

CREATIVITY AND PROBLEM-SOLVING (P. 59)

Generates ideas, fresh perspectives and original approaches; open-minded. Uses creativity and originality when problem-solving. Goes beyond traditional ways to address issues and problems.

Education and experience: Please indicate the **minimum educational** requirements for this job, as it relates to a new employee on the **first day** of work (not the educational background of the person now in the position), the specific fields of study that are acceptable, and whether a Master's degree (in which fields) will substitute for any of the required job related experience.

High school Graduation

Other training (e.g., software, specific machinery, etc.), certification (e.g., CPA, Professional engineer, etc.), or licensing (e.g., commercial driver's, pilot, psychologist, etc.) required (please specify):

Satisfactory Completion of CADD (Microstation) and Road Design software (Geopak) training

Please indicate the minimum, amount of **job-related work experience** needed as a new employee on the first day of work (not the experience of the person now in the position). Please indicate the specific types of experience that will be considered job-related.

7 years of progressively responsible direct highway design experience at least 3 years as an advanced designer.

☒ This agency will accept alternative methods of obtaining necessary qualifications.

For recruiting purposes please list specific examples of acceptable alternative methods of obtaining those qualifications. **These examples will appear on a vacancy announcement**.

An Associates drafting degree involving Engineering or Architectural coursework and at least 2 years as an advanced designer OR...A Bachelor's Degree in Civil Engineering, C.E.T., or a related field and at least 1 year as an advanced designer .

SECTION IV – Other Important Job Information

List any other important information associated with this position, such as working conditions or other factors which are deemed critical or non-negotiable to the position and which will need to be included on the vacancy announcement or other recruitment documents. (This information will be NOT be used for classification purposes.) For example: The position is required to travel throughout the state in excess of 12,000 miles per year and to perform duties on active construction sites in proximity to heavy equipment, hot asphalt, and high speed traffic, requiring use of hard hats and specialized safety training. OR, This position is not subject to alternative work schedules or working from home as it is required to answer the phone and receive visitors for the agency between the hours of 8am to 5pm, Monday through Friday.

Working conditions are good and physical demands are negligible. Travel is required four to five times a year, twice overnight. May be required to operate state vehicle on two or three of the trips.

SECTION V – Signatures

My signature below indicates the statements in Section I to IV are accurate and complete.		
Employee: **Signature**	 **Title**	 **Date**
Immediate Supervisor: **Signature**	 **Title**	 **Date**
Name: **Signature**	 **Title**	 **Date**
Division/District Administrator: **Signature**	 **Title**	 **Date**
Departmental Designee: **Signature**	Chief, Employee Relations Bureau, Human Resources Division **Title**	 **Date**